

Date: Friday, 12/7/2007 10:21:42 AM
User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : FWD TUBE ASSEMBLY
Job Number : 36192	
Estimate Number : 10467	
P.O. Number :	Part Number : D3391021
This Issue : 12/7/2007 S.O. No. :	Drawing Number : D3391 REV G
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : G
Previous Run : 36191	Material :
Written By : <u>Am 12.07</u>	Due Date : 1/10/2008 Qty: 1 Um: Each
Checked & Approved By : <u>Am 12.07</u>	
Comment : Est. A 05.09.13 New issue KJJLM	
Est. B 06.02.10 Dwg rev.D ecn 773 EC	
Est. C 06.05.02 Added inspections EC	
est D 07.03.13 rev F dwg EC	
est E 07.11.07 revG dwg ecn1053P EC verified by: DD	
Est Rev:f ECN 1056 07-11-12 DD verified by: EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D6013047	SKIDTUBE MAT'L
-----	----------	----------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
SKIDTUBE MAT'L

Pick:

Qty	Part Number	Description	Batch
1	D6013-047	Extrusion	<u>B26547</u>

am 08.01.09 (D)

2.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
-----	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1
Cut extrusion to 46.52 +0.010 -0.020

am 08.01.09 (C)

3.0	BENDING	BENDING MACHINE
-----	---------	-----------------



Comment: Nc bender
Bend as per Dwg D3391 Using Bend Prog 3391021

EL/SD 8-1-16

4.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

am 08/03/10 (C)

5.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1
1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. G
Identify as D3391-1

am 08/07/10 (D)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/7/2007 10:21:42 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36192

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

2-Deburr

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

ml 08/07/16

①

7.0

MILLING CONV.

CONVENTIONAL MILLING MACHINE



Comment: CONVENTIONAL MILLING MACHINE

Drill X1 Aft cap as per Dwg D3391 .1875" dia

ml 08/07/16

①

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

ml 08/07/16

①

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

508/07/16 @

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5-Deburr & Scribe Batch number Inside aft end.

8-7-17

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S. Salas @

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/7/2007 10:21:42 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36192

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

SL 8-7-24

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Q.M 08.07.24 (P)

14.0

D36704200

SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

SPACER

batch:

35938

SL 8-7-21

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch:

107621

SL 8-7-24

exp. date: 9-8-1

cure time 12hrs. as per QSI015

2- grind crossbolt flush

3-back drill crossbolt if necessary

7 SL 8-7-24

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 08/27/30 (P)

17.0

POWDER COATING

POWDER COATING



M 108523



(P)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M 08/27/30

18.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FL 08/27/31 (P)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/7/2007 10:21:42 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36192

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

ALS41032130

Insert



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

batch: m105819

or equivalent

per QSI 017

FL

20.0

ALS41032225

Insert



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

INSERT

batch: m100489

or equivalent

per QSI 017

FL

21.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

FL 08/07/31 ①

22.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/07/31

23.0

D3401041

Tow Cap Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Tow Cap Assembly

Pick:

Qty

Part Number

Description

Batch

1

D3401-041

Tow Cap

B36216

FL

24.0

D356413

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARSHOE

B39791

FL

25.0

D356613

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

B37574

FL 08/07/31 ①

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 12/7/2007 10:21:42 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: FWD TUBE ASSEMBLY

Job Number: 36192

Part Number: D3391021

Job Number:



Seq. #:

Machine Or Operation:

Description :

26.0

D36721

PHENOLIC WASHER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
PHENOLIC WASHER

639275

FL

27.0

AN3C4A

BOLT



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
Bolt
Pick:

Qty	Part Number	Description	Batch
4	AN3C4A	Bolt	<i>M108599</i>

FL

28.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)
washer

M108672

FL

29.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1
Install tow Cap as per Dwg D3391
Identify as D3391-021

FL 08/07/31 ①

30.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP
Inspect thread of each insert using DT8821

5 08/04/31 ①

31.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
Identify and Stock
Location: *W/O 38720 D3391-023*

1080827 ①

PRP 39105 Pgs/28

32.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

D3391021

Job Completion



MF 08-08-28

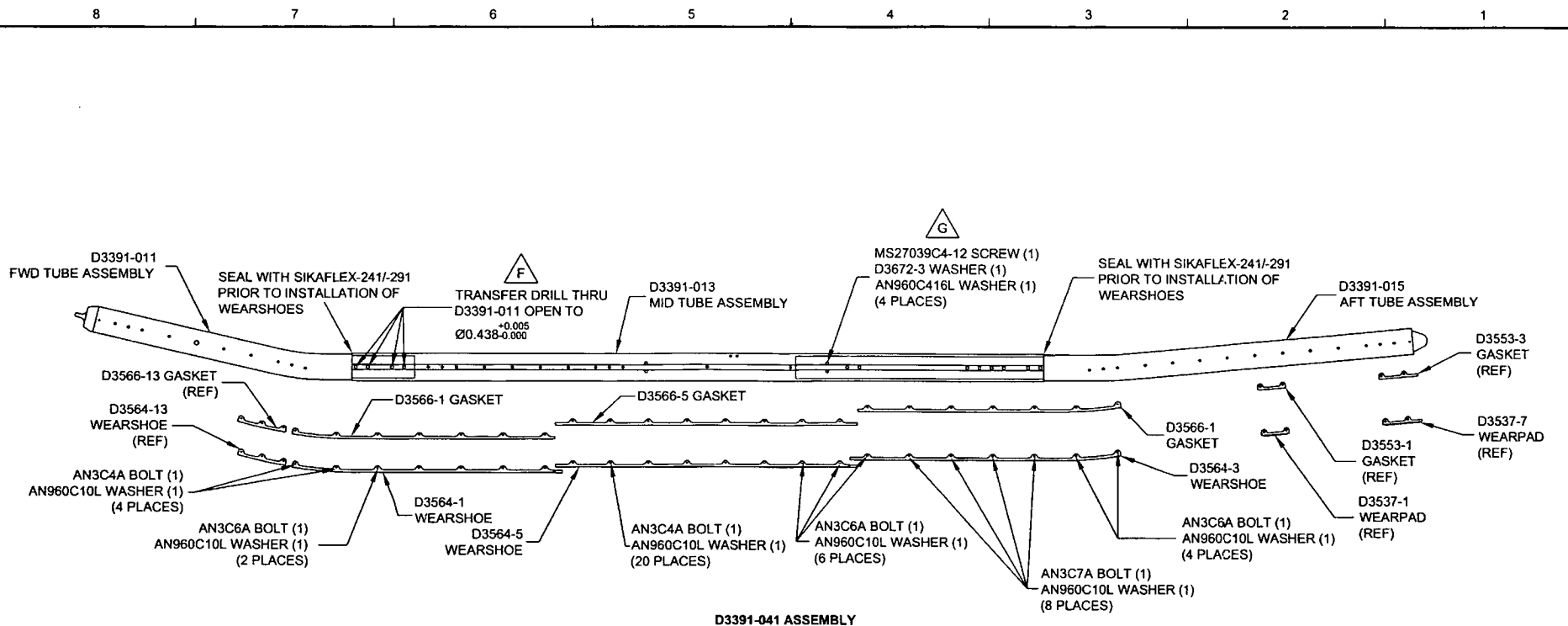
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
07-11-06

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
1	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.

G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.07.31		

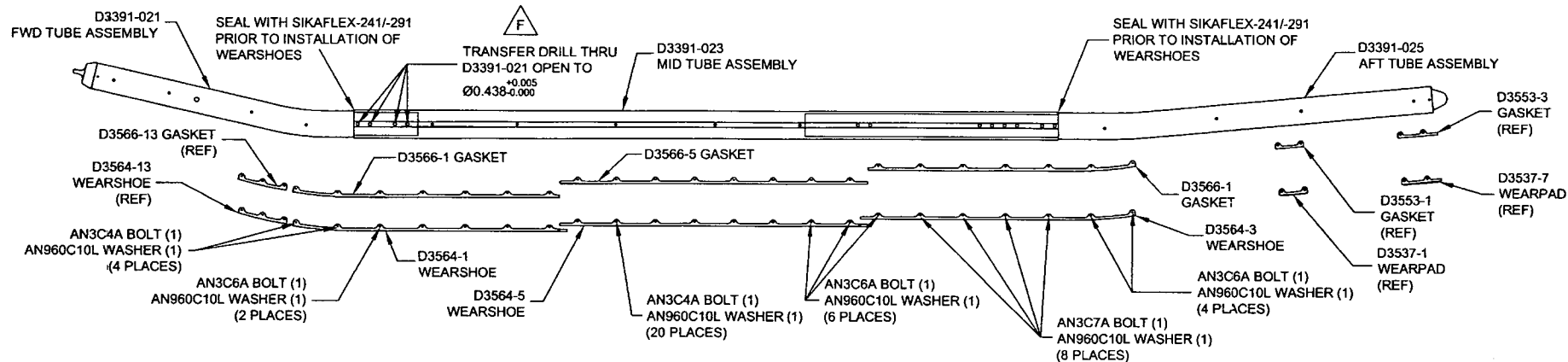
DART AEROSPACE USA, INC
PORT HADLOCK, WA

DRAWING NO. D3391
REV. G
SHEET 1 OF 8

TITLE 412 FLOAT SKIDTUBE
SCALE NTS

COPYRIGHT © 2005 BY DART AEROSPACE USA, INC
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

WORK ORDER
36192
SUBJECT TO AMENDMENT
WITHOUT NOTICE
CONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY



D3391-043 ASSEMBLY




RELEASED
07.11.92

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

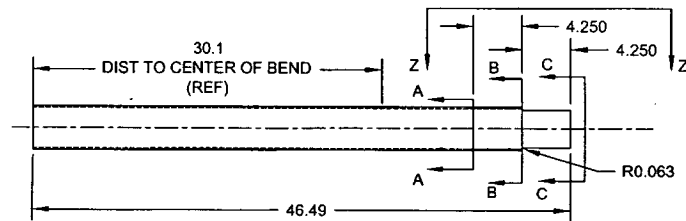
QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

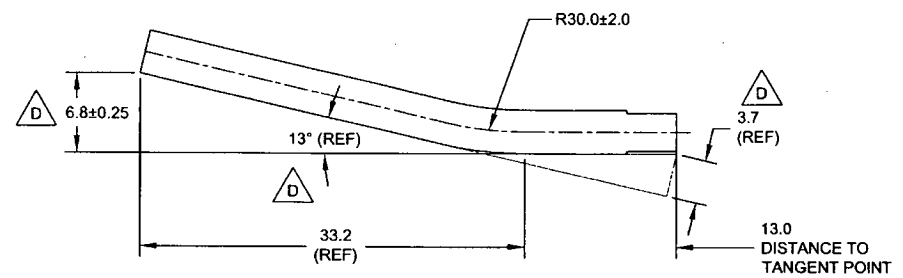
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	JLC	PORT HADLOCK, WA	
CHECKED	h	DRAWING NO.	REV. G
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			

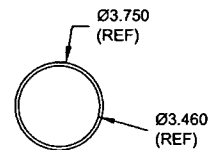
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
NO. 20192
WORK ORDER



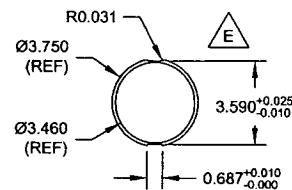
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



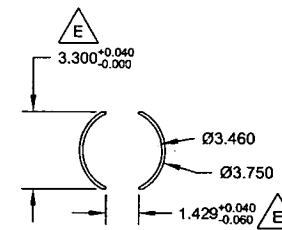
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



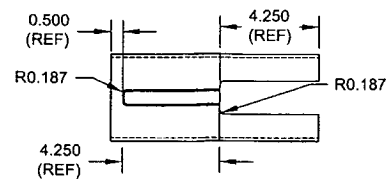
SECTION A-A
(SCALE 1:5)



SECTION B-B
(SCALE 1:5)



SECTION C-C
(SCALE 1:5)

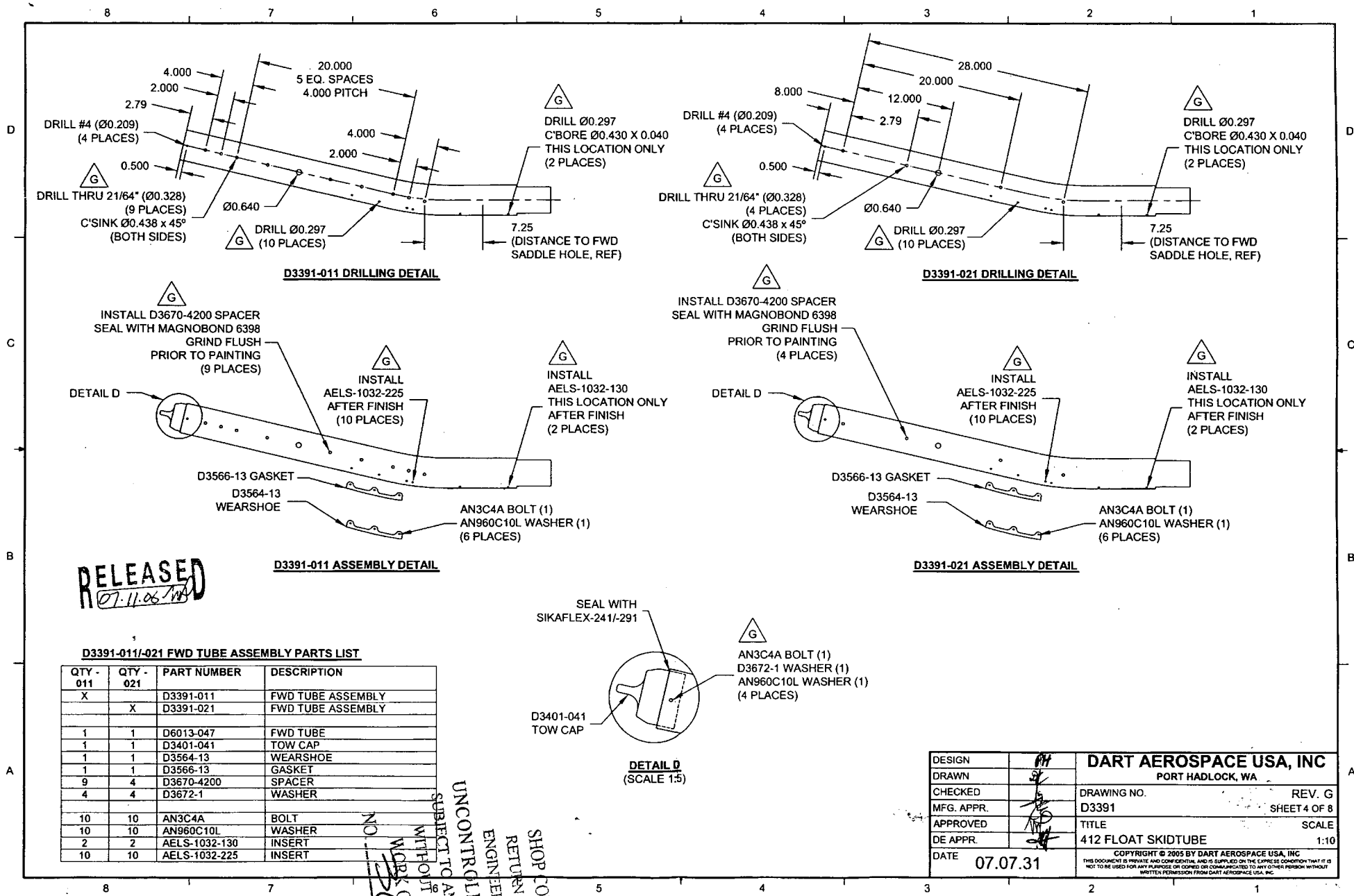


VIEW Z-Z
(SCALE 1:5)

RELEASED
07-11-06

NO. 30192
WORK ORDER
WITHOUT NOTICE
UNCONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY

DESIGN	SH	DART AEROSPACE USA, INC	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	+	DRAWING NO.	REV. G
MFG. APPR.	CE	D3391	SHEET 3 OF 8
APPROVED	SH	TITLE	SCALE
DE APPR.	SH	412 FLOAT SKIDTUBE	1:10
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			



RELEASED
07.11.06

NO. 30192

WORK ORDER







SUBJECT TO AMENDMENT WITHOUT NOTICE

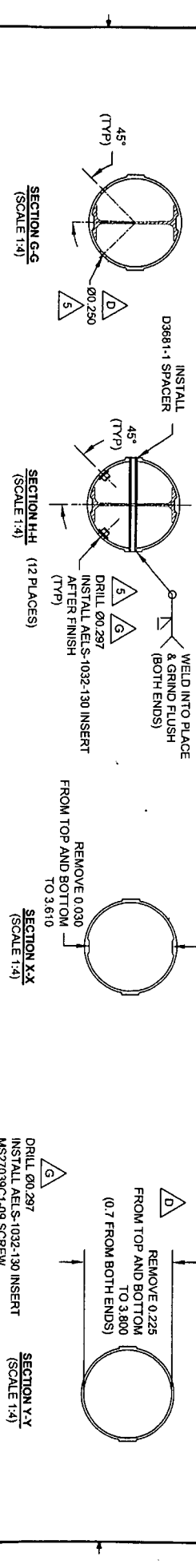
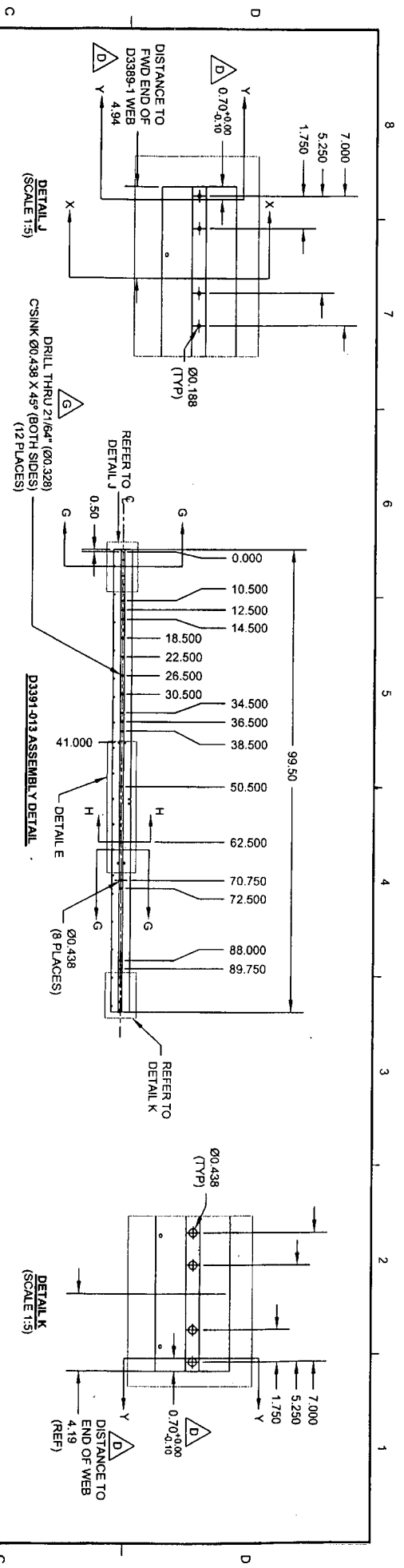
UNCONTROLLED COPY

ENGINEERING

RETURN TO

SHOP COPY

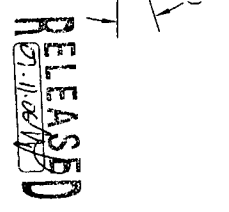
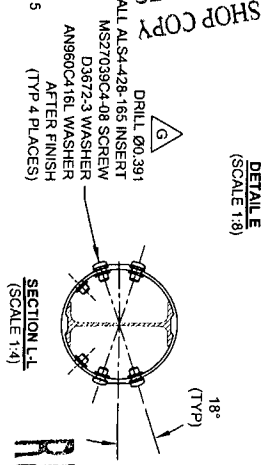
DESIGN		DART AEROSPACE USA, INC	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D3391	SHEET 4 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	1:10
DATE	07.07.31	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.			



D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
12	D3681-1	SPACER
4	D3672-1	WASHER
4	D3672-3	WASHER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

- D3391-013 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
 - 2) INSTALL D3391-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
 - 3) WELDING: PER DART QSI 004



DESIGN	DRWN	CHECKED	DATE	07.07.31
DART AEROSPACE USA, INC	PORT HADLOCK, WA	DRAWING NO.	D3391	REV. G
TITLE				412 FLOAT SKIDTUBE
SHEET 5 OF 8				SCALE 1:20

THIS DOCUMENT IS A PROPERTY OF DART AEROSPACE USA, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

